TEMPERATURE AND HEAT

I. TEMPERATURE

A. A MEASURE OF THE AVERAGE KINETIC ENERGY OF MOLECULES.

B. AS THE AVERAGE KINETIC ENERGY INCREASES SO DOES THE TEMP.

C. KINETIC ENERGY < \_\_\_\_\_\_\_\_\_>

D. HOW DO WE MEASURE TEMPERATURE?

1. THERMOMETER

a. LIQUIDS EXPAND WHEN HEATED

Hg AND ALCOHOL

b. HIGHER KE CAUSES MOLECULES TO MOVE FASTER

c. AS THEY MOVE FASTER THEY GET FARTHER APART

d. THEY THEN BEGIN TO EXPAND AND THEN RISE UP THE

NARROW TUBE.

d. LIMITATION OF LIQUID THERMOMETERS

CAN ONLY MEASURE TEMPERATURE WITHIN A CERTAIN

RANGE.

e. OTHER METHODS OF MEASURING TEMPERATURE

* METAL STRIPS – REFRIGERATOR
* DIGITAL – MEASURES CHANGES IN CURRENT

f. COMMON SCALES USED TO MEASURE TEMPERATURE

* FAHRENHEIT
  + WATER BOILS AT 212 DEGREES
  + WATER FREEZES AT 32 DEGREES
  + 180 DEGREE SPAN BETWEEN 320 AND 2120
* CELSIUS
  + WATER BOILS AT 100 DEGREES
  + WATER FREEZES AT 0 DEGREES
  + 100 DEGREE SPAN BETWEEN 00  AND 1000

KELVIN

* BASED ON ABSOLUTE ZERO
* NO NEGATIVE VALUES IN THE KELVIN SCALE
* WHAT IS THE LOWEST READING ON THE KELVIN SCALE?
* WHEN DOES MOLECULAR MOTION STOP?

E. TEMPERATURE CONVERSION

F = (9/5 X C0) + 32

C = 5/9(F-32)

K = C + 273